ORIGINAL ARTICLE

Prevalence of atherogenic dyslipidemia in primary care patients at moderate-very high risk of cardiovascular disease. Cardiovascular risk perception

Nuria Plana[a], Daiana Ibarretxe[a], Anna Cabré[a], Emilio Ruiz[b], Lluis Masana[a],*

[a] Unidad de Medicina vascular y metabolismo, Hospital Universitario Sant Joan de Reus, Universidad Rovira i Virgili IISPV, CIBERDEM, Reus, Spain
[b] Departamento Médico, Ferrer Internacional, Spain

Abstract

Introduction: Atherogenic dyslipidemia is an important risk factor for cardiovascular disease. We aim to determine atherogenic dyslipidemia prevalence in primary care patients at moderate-very high cardiovascular risk and its associated cardiovascular risk perception in Spain.

Methods: This cross-sectional study included 1137 primary care patients. Patients had previous cardiovascular disease, diabetes mellitus, SCORE risk ≥3, severe hypertension or dyslipidemia. Atherogenic dyslipidemia was defined as low HDL-C (<40 mg/dL [males], <50 mg/dL [females]) and elevated triglycerides (≥150 mg/dL). A visual analog scale was used to define a perceived cardiovascular disease risk score.

Results: Mean age was 63.9 ± 9.7 years (64.6% males). The mean BMI was 29.1 ± 4.3 kg/m^2, and mean waist circumference 104.2 ± 12.7 cm (males), and 97.2 ± 14.0 cm (females). 29.4% were smokers, 76.4% had hypertension, 48.0% were diabetics, 24.7% had previous myocardial infarction, and 17.8% peripheral arterial disease. European guidelines classified 83.6% at very high cardiovascular risk. Recommended HDL-C levels were achieved by 50.1% of patients and 37.3% had triglycerides in the reference range. Target LDL-C was achieved by 8.8%. The overall atherogenic dyslipidemia prevalence was 27.1% (34.1% in diabetics). This prevalence in patients achieving target LDL-C was 21.4%. Cardiovascular risk perceived by patients was 4.3/10, while primary care physicians scored 5.7/10.

Conclusions: When LDL-C levels are controlled, atherogenic dyslipidemia is more prevalent in those patients at highest cardiovascular risk and with diabetes. This highlights the importance of intervention strategies to prevent the residual vascular risk in this population. Both patients and physicians underestimated cardiovascular risk.

* Corresponding author.
  E-mail address: luis.masana@urv.cat (L. Masana).

PALABRAS CLAVE
Dislipidemia;
Factores de riesgo;
Atención primaria;
Colesterol
high-density
lipoprotein;
Triglicéridos

Prevalencia de dislipidemia aterogénica en pacientes de atención primaria en España con riesgo de enfermedad cardiovascular de moderado a muy alto. Percepción del riesgo cardiovascular

Resumen

Introducción: La dislipidemia aterogénica representa un factor de riesgo importante de enfermedad cardiovascular. Se pretende determinar la prevalencia de dislipidemia aterogénica en pacientes de atención primaria con riesgo cardiovascular de moderado a muy alto y la percepción de riesgo cardiovascular asociado en España.

Métodos: Estudio transversal que incluyó 1.137 pacientes de atención primaria. Los pacientes presentaban enfermedad cardiovascular previa, diabetes mellitus, SCORE $\geq$3, hipertensión arterial severa o dislipidemia. La dislipidemia aterogénica se definió como C-HDL bajo (<40 mg/dl [hombres], <50 mg/dl [mujeres]) y triglicéridos elevados ($\geq$150 mg/dl). Para definir la puntuación de percepción de riesgo de enfermedad cardiovascular se utilizó una escala visual analógica.

Resultados: La edad media fue de 63,9 $\pm$ 9,7 años (64,6% hombres). El IMC promedio fue de 29,1 $\pm$ 4,3 kg/m^2, y la media del perímetro de la cintura de 104,2 $\pm$ 12,7 cm (hombres) y 97,2 $\pm$ 14,0 cm (mujeres); el 29,4% eran fumadores, el 76,4% hipertensos, el 48,0% diabéticos, el 24,7% tenían antecedentes de infarto de miocardio y el 17,8% enfermedad arterial periférica. El 83,6% se clasificaron como pacientes de muy alto riesgo cardiovascular según las guías europeas. El 50,1% de los pacientes alcanzaron los niveles recomendados de C-HDL y el 37,3% tenían los triglicéridos dentro del rango. El 8,8% consiguieron niveles objetivo de C-LDL. La prevalencia general de dislipidemia aterogénica fue del 27,1% (34,1% en diabéticos). Esta prevalencia en los pacientes que alcanzaron niveles objetivo de C-LDL fue del 21,4%. El riesgo cardiovascular percibido por los pacientes fue de 4,3/10, mientras que sus médicos de atención primaria puntuaron un 5,7/10.

Conclusiones: Cuando se controlan los niveles de C-LDL la dislipidemia aterogénica es más prevalente en aquellos pacientes con mayor riesgo cardiovascular y diabéticos, lo que pone de manifiesto la importancia de las estrategias de intervención para prevenir el riesgo vascular residual en esta población. Tanto pacientes como médicos subestimaron el riesgo cardiovascular.
© 2014 Sociedad Española de Arteriosclerosis. Publicado por Elsevier España, S.L.U. Todos los derechos reservados.

Introduction

Atherogenic dyslipidemia involves decreased levels of high-density lipoprotein cholesterol (HDL-C) and increased triglycerides[1] and is associated to qualitative alteration in low-density lipoprotein colesterol (LDL-C) which are smaller and denser. This condition has been associated to increased cardiovascular risk and is perceived as highly prevalent in the primary care setting. It is typically seen in patients with obesity, metabolic syndrome, insulin resistance, and type 2 diabetes mellitus (type 2 DM).[2,3] While several epidemiological studies have examined the prevalence of lipid abnormalities, most have focused only on total cholesterol (TC) levels. A large study conducted in 2006 on working people undergoing routine check-up in Spain obtained a prevalence of dyslipidemia of 64% (TC $\geq$200 mg/dL, LDL-C $\geq$160 mg/dL, triglycerides $\geq$200 mg/dL, or HDL-C <40/50 mg/dL), and TC $\geq$240 mg/dL of 15%.[4] Vegazo et al. in the same year found that one out of four patients who attended outpatient clinics of the Spanish health service had been diagnosed with dyslipidemia without diagnostic specific reference levels specified.[5] Results of a metaanalysis including 47 cross-sectional studies in Spain published between 1990 and 2003 on the main cardiovascular risk factors prevalence showed that 23% of middle-aged adults had TC $\geq$250 mg/dl and 50–60% had TC $\geq$200 mg/dL.[6] In line with these results, a more recent study on 11,554 patients conducted in Spain found that about 50% had hypercholesterolemia (TC $\geq$200 mg/dL or drug treatment).[7]

Numerous studies have shown a continued and gradual relationship between serum cholesterol, mainly LDL-C, and total mortality due to ischemic heart disease,[8–14] as well as the association of LDL-C reductions and European guidelines recommend LDL-C below 100 or 70 mg/dl for high and very high cardiovascular risk patients.

Moreover despite obtaining LDL-C targets, the number of new events remains inappropriately high. This situation is referred to residual cardiovascular risk and, apart from non-lipid conditions, lipoprotein alterations beyond LDL-C concentrations could have a role, particularly low HDL-C and high triglycerides (atherogenic dyslipidemia). Two subgroup analyses of two studies identify atherogenic dyslipidemia subgroup as a group of patients that could obtain benefit of correcting the lipoprotein abnormalities,[15,16] suggesting that a good global control of dyslipidemia is essential in prevention of cardiovascular disease. The objective of this study was to assess the prevalence of atherogenic dyslipidemia among adult patients at moderate to high cardiovascular risk seen in primary care, and to examine grade of control on serum lipid components and patients' and physicians' perceptions of cardiovascular risk.